REMARKS

Reconsideration of the application is respectfully requested.

A. Drawings Objections:

The examiner has objected to the drawings pursuant to 37 C.F.R. § 1.83(a) based on the position that several elements of the claims are not disclosed in the drawings. Applicant submits that given the text of the specification a person skilled in the art would recognize that the existing drawings disclose all of the structural elements questioned by the Examiner as follows:

(1) One skilled in the art would recognize that the microprocessor 44 disclosed in Fig. 1 and described on page 6 of the application may be configured to serve as a weighting assignment member.

(2) One skilled in the art would recognize that the microprocessor 44 disclosed in Fig. 1 and described on page 6 of the application may be configured to serve as an obstruction detector.

(3) One skilled in the art would recognize that an ADC (analog-to-digital) convertor as disclosed in Fig. 1 and described on page 6 of the application may be configured to serve as a sampler.

(4) One skilled in the art would recognize that the microprocessor 44 disclosed in Fig. 1 and described on page 6 of the application may be configured to serve as a comparator.

(5) One skilled in the art would recognize that the microprocessor 44 disclosed in Fig. 1 and described on page 6 of the application may be configured to serve as a signal generator.

Accordingly, withdrawal of the objection is requested.

B. Specification Objections

Consistent with the foregoing, Applicant submits that the specification contains a proper antecedent basis for the terms (1) weighting assignment member, (2) obstruction detector, (3) sampler, (4) comparator and (5) signal generator to satisfy the requirements of 37 C.F.R. 1.75(d)(1) and the MPEP § 608.01(o). For example, the application at page 4, line 23, identifies a "weight assigning member." An "obstruction detector" is identified at page 4, line 23. A sampler is described at page 4, lines 5-6 and also at page 7, lines 2-3. A comparator is

described at page 4, lines 9-11. A "signal generator" is identified on page 5, lines 2-3. For these reasons, Applicant requests that the Examiner withdraw the rejection.

C. Claim Rejections

The Examiner rejected claims 1-40 under 35 U.S.C. § 103(a) over Guenke et al. (U.S. in view of Rapoport et al. (U.S. 5,803,066). It is well established that the Examiner bears the initial burden of demonstrating a *prima facia* case of obviousness. *In re Rinehart*, 531 F.2d 1048, 189 U.S.P.Q. 143 (C.C.P.A. 1976). A prima facia case is established if there exists (1) a teaching of all the elements of a claim in the prior art references, *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974); (2) a suggestion or motivation to modify or combine the references from the prior art references or a general knowledge in the field, *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998); and (3) a reasonable expectation of success in doing so, *In re Merck & Co., Inc.*, 800 F.2d 1091 (Fed. Cir. 1986). For the following reasons, Applicant requests that the Examiner withdraw the rejection.

(1) Claims 1-5

Applying the standard of 35 U.S.C. § 103(a) to claims 1-5, it is apparent that these claims are not obvious since all of the elements of the claims are not disclosed in the cited references. In this regard, in the cited text of Rapoport et al. (col. 7, line 50 to col. 12, line 60), the use of "weighting factors" in general is disclosed. However, the disclosed methodology of Rapoport et al. is different from the Applicant's invention. Notably, in the device disclosed by Rapoport et al., weighting factors are applied to multiple "flow limitation parameters" to derive a flow limitation probability. Rapoport et al., col. 10, lines 2-28. These "*flow limitation* parameters" are calculated limitation indices that represent the results of an analysis of the inspiratory portion of a flow signal that quantifies flow limitation. Rapoport et al., col. 9, lines 64-65. In each of these analyses that result in a flow limitation parameter, Rapoport et al. does not disclose an application of weighting factors to the flow signal.

In Applicant's invention, methodologies for generating indices of obstruction are improved by assigning different weighting factors to respiratory airflow. For example, as disclosed in the specification, weighting factors are assigned to inspiration flow samples depending on (a) the magnitude of each sample with respect to the mean inspiration flow; and (b) the time-wise position of each sample with respect to a time reference such as mid-inspiration. Specification, p. 9, lines 1-6. By assigning a different weighting factor to a sample

that is less than a particular value, for example, the mean flow, during an obstruction index calculation or a flow flattening index calculation, there is an improved sensitivity to the respiration signal without affecting the index calculated for normal breathing where most of the flow is greater than the mean. Specification, p. 9, lines 7-10. Similarly, by assigning a different weighting factor to samples that occur after a time reference point, the subsequent samples become more significant. This improves sensitivity to some obstructions without affecting the obstruction index for other breaths that are symmetrical in time about the center point of the inspiration. Specification, p. 9, lines 11-14.

In independent claim 1, Applicant's invention is defined to include an "obstruction detector including a weight assigning member arranged to assign several weighting factors to portions of said flow signal and to generate an obstruction signal..." One skilled in the art would recognize that a weight assigning member arranged to assign several weighting factors to "portions of said flow signal" is different from using weighting factors or weighting coefficients with the "flow limitation parameters" disclosed by Rapoport et al. Therefore, Applicant submits that no *prima facia* case of obviousness exists since all of the elements of claims 1-5 are not disclosed in the cited prior art. For this reason, Applicant requests that the Examiner withdraw the rejections of claims 1-5.

(2) Claims 6 and 7-20

No *prima facia* case of obviousness has been presented for independent apparatus claims 6 and 7 and dependent claims 8-20 since all of the elements of these claims are not disclosed or suggested in the prior art. To this end, claims 6 and 7 define obstruction detectors configured to determine a "weighted average signal, said weighted average signal being dependent on a weighted average of said flow signal in accordance with one of an amplitude and a time position of portions of said flow signal, said obstruction detector including a signal generator that generates a signal indicative of an airway obstruction based on said weighted average signal." No such obstruction detector is disclosed by the cited references as relied upon by the Examiner.

Noteably, in using weighting factors with its calculated flow limitation parameters, Rapoport et al. do not disclose any particular methodology associated with their use. Rather, Rapoport et al. merely disclose multiplying weighting factors with the flow limitation parameters. Rapoport et al., col. 10, lines 20-25. With regard to Applicant's invention, the specification

discloses that weighting factors are assigned to inspiration flow samples depending on (a) the magnitude of each sample with respect to the mean inspiration flow; and (b) the time-wise position of each sample with respect to a time reference such as mid-inspiration. Specification, p. 9, lines 1-6. Rapoport et al. neither suggests nor discloses such a conditional assignment of weighting factors.

As defined in claims 6 and 7, Applicant's invention encompasses such a conditional assignment not disclosed by Rapoport et al. These claims define a weighted average signal "being dependent on a weighted average of said flow signal in accordance with one of an amplitude and a time position of portions of said flow signal..." Simply put, the weighting factors of Rapoport et al do not depend on one of an amplitude and a time position of portions of the flow signal. For these reasons, the cited references do not disclose or suggest all of the elements of claims 6 and 7-20. Accordingly, Applicant requests that the Examiner withdraw the rejection of claims 6-20.

(3) Claims 21-30

Applicant submits that a *prima facia* case of obviousness has not been presented for method claims 21-30. Independent claim 21 defines an invention with the step of assigning weighting factors to portions of a predetermined section of patient airflow. As previously noted, Rapoport et al. utilize weighting factors with multiple *flow limitation parameters* to synthesize a single probability of flow limitation. They do not disclose or suggest a method including the step of assigning of weighting factors to portions of a predetermined section of patient airflow. Accordingly, Applicant requests that the Examiner withdraw the rejection of claims 21-30.

(4) Claims 31-40

Finally, independent method claim 31 and dependent claims 32-40 also contain steps not disclosed by Rapoport et al. To this end, claim 31 defines a method including the steps of sampling a section of said air flow during successive breathing cycles to obtain a set of samples for a breathing cycle and assigning a weight to each sample. As previously discussed, Rapoport et al. utilize weighting factors with multiple *flow limitation parameters*. For these reasons, claims 31-40 are not disclosed or suggested by the prior art and accordingly, Applicant requests that the Examiner withdraw the rejection.

D. Conclusion

For the aforementioned reasons, Applicant submits that the current application claims novel and non-obvious subject matter and is in condition for allowance. Early and favorable allowance is therefore requested.

Respectfully submitted,
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11/11/2003
Date

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